In the Claims:

Please amend claims 1, 7, 14, and 19 as follows:

1. (Currently Amended) A method for estimating a result size of a Group-By operation

comprising:

organizing a database stored on a computer readable medium with data records maintained in multiple tables;

calculating a cumulative selectivity based upon aggregation of individual selectivity of each column in a group of tables in a Group-By operation; and

multiplying said calculated cumulative selectivity by an input size of said Group-By operation to estimate a result size of said Group-By operation; ~~and~~

~~applying said estimated result size to memory allocation~~ computing a memory requirement for said Group-By operation based on said estimated result size; and

allocating memory for said operation based upon said memory requirement   .

2. (Original)   The method of claim 1, wherein the step of calculating a cumulative selectivity includes normalizing a selectivity for each column in said group.

3. (Original)   The method of claim 2, wherein the step of normalizing a selectivity for each column includes applying a weight factor to said selectivity based upon a relative size of a table in which said column resides.

4. (Original)   The method of claim 1, wherein the step of calculating a cumulative selectivity is based upon the following mathematical relationship: $S_{ab} = S_a + S_b - (S_a \times S_b)$, wherein S_a is a selectivity of column "a", S_b is the selectivity of column "b", and S_{ab} is a cumulative selectivity of columns "a" and column "b".

5. (Original)   The method of claim 4, further comprising an iterative application of said mathematical relationship for each additional column in said group.

6. (Original) The method of claim 1, wherein the step of calculating a cumulative selectivity includes equivalent columns of said group based upon query predicates.

7. (Currently Amended) A Group-By operation size estimator comprising:

~~a processor in communication with storage media;~~

~~said storage media having a database with data records maintained in tables;~~

a selectivity manager in communication with <u>a</u> ~~said~~ database<u>, said selectivity manager</u> adapted to calculate a cumulative selectivity based upon an aggregation of selectivity of an individual column in a group of tables in a Group-By operation; and

a result size manager in communication with said database adapted to receive said calculated cumulative selectivity from said selectivity manager, to estimate a size of said Group-By operation as a product of said calculated cumulative selectivity and an input size of said Group-By operation, ~~and~~ to <u>compute</u> ~~apply said estimated size to~~ a memory <u>requirement</u> ~~allocation~~ for said Group-By operation <u>based on said estimated size of said Group-By operation, and to allocate memory for said operation based upon said memory requirement</u>.

8. (Original) The estimator of claim 7, wherein said selectivity manager is adapted to normalize a selectivity for each column in said group.

9. (Original) The estimator of claim 8, wherein normalization of said selectivity includes a weight factor adapted to be applied to said cumulative selectivity calculation.

10. (Original) The estimator of claim 9, wherein said weight factor includes a relative size of a table in which said column resides.

11. (Original) The estimator of claim 7, wherein said selectivity manager utilizes the following mathematical relationship: $S_{ab} = S_a + S_b - (S_a \times S_b)$, wherein S_a is a selectivity of column "a", S_b is a selectivity of column "b", and S_{ab} is a cumulative selectivity of columns "a" and column "b".

12. (Original) The estimator of claim 11, wherein said selectivity manager is adapted to iteratively apply said mathematical relationship for each additional column in said

group.

13. (Original) The estimator of claim 7, wherein said selectivity manager is adapted to include equivalent columns of said group based upon query predicates.

14. (Currently Amended)   An article comprising:

a computer-readable data storage medium;

a database stored on said computer readable medium with data records maintained in multiple tables;

means in the medium for calculating a cumulative selectivity of each column in a group of tables in a Group-By operation; ~~and~~

means in the medium for estimating a result size of said operation based upon said cumulative selectivity;

means in the medium for computing a memory requirement for said Group-By operation based on said estimated result size; and

means in the medium for allocating memory for said operation based upon said memory requirement.

15. Canceled

16. (Original) The article of claim 14, wherein said means for calculating said cumulative selectivity includes means for normalizing a selectivity for each column in said group.

17. (Original) The article of claim 16, wherein said means for normalizing said selectivity includes a weight factor based upon of a relative size of a table of said column.

18. (Original) The article of claim 14, wherein said means for calculating said cumulative selectivity is inclusive of equivalent columns.

19. (Currently Amended)   A method for estimating a result size of a Group-By operation

comprising:

organizing a database stored on a computer readable medium with data records maintained in multiple tables;

calculating a cumulative selectivity based upon aggregation of individual selectivity of each column in a group of tables in a Group-By operation, wherein the step of calculating a cumulative selectivity is based upon the following mathematical relationship: $S_{ab} = S_a + S_b - (S_a \times S_b)$, wherein S_a is a selectivity of column "a", S_b is the selectivity of column "b", and S_{ab} is a cumulative selectivity of columns "a" and column "b"; and

multiplying said calculated cumulative selectivity by an input size of said Group-By operation to estimate a result size of said Group-By operation; ~~and~~

~~applying said estimated result size to~~ computing a memory requirement ~~allocation~~ for said Group-By operation based on said estimated result; and

allocating memory for said operation based upon said memory requirement.

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